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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/816,274

04/01/2004

Eitaro Morita

8305-244US (NP151-1)

8814

570

7590

09/22/2008

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EXAMINER

MCAVOY, ELLEN M

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

09/22/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/816,274	<b>Applicant(s)</b> MORITA, EITARO	
	<b>Examiner</b> Ellen M. McAvoy	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)                  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application        |
| Paper No(s)/Mail Date _____  | 6) <input checked="" type="checkbox"/> Other: <u>Declaration noted</u> . |

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions: amendments to the claims, remarks, and a Declaration under 37 C.F.R. § 1.132, filed on 09 July 2008, have been entered.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al (6,617,286) in combination with Watts et al (6,613,722), and either Sato et al (6,593,281) or Ward (6,451,745).

Applicant's arguments filed 09 July 2008 have been fully considered but they are not persuasive. As previously set forth, Sato et al (6,617,286) ["Sato ('286)"] disclose a lubricating oil composition for continuously variable transmissions which comprises a lubricating base oil made of mineral oil and/or a synthetic oil formulated with a phosphorus-based wear preventive additive (A), a metal detergent additive (B) and an ashless dispersant additive (C). Sato ('286) teaches that the base oil component has a kinematic viscosity ranging from 0.5 to 200 mm<sup>2</sup>/s at

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100°C, preferably 2-25 mm<sup>2</sup>/s at 100°C, and that mixtures of mineral oils and synthetic oils may be used in combination. See column 3, line 43 to column 4, line 43. The phosphorus-containing wear preventive used as component (A) includes phosphate esters and phosphite esters which may contain sulfur atoms. Sato ('286) teaches that the amount of the additive is within the range of 200-500 ppm as phosphorus (P) based on the total weight of the composition. See column 4, lines 48-63. The metal detergent additive (B) includes overbased calcium salicylates having a TBN ranging from 10-450 mg KOH/g. Sato ('286) teaches that the amount of metal detergent is preferably in the range of 100-1000 ppm as a metal content based on the total weight of the composition. The ashless dispersant additive (C) includes boron-containing succinimides. See column 5. Sato ('286) allows for the addition of other additives to the composition including non-borated imide ashless dispersants. See column 6. Watts et al ["Watts"] is added to teach that the bisimides of applicant's claims, as amended, are well-known in the art as additives to lubricating oil compositions which are suitable for use in continuously variable transmissions. The non-borated succinimide component is set forth in column 10 wherein substituent groups R<sub>7</sub> are alkyl groups containing 6-30 carbon atoms. Thus, the examiner maintains the position that the compositions of Sato in combination with Watts clearly meet the limitations of the above rejected claims.

In response, applicant amended independent claim 1 to include component (I) a friction modifier which is at least one compound selected from the group consisting of fatty acid esters and metal salts of fatty acids in the oil composition, and amended claim 1 to include that the lubricating the base oil component (A) comprises (A-1) a mineral and/or synthetic oil having a low viscosity, and (A-2) a heavy mineral oil having a higher viscosity than (A-1). Applicant

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argued that although Sato teaches the addition of friction modifiers to the lubricating oil composition, Sato does not teach the use of fatty acid esters and metal salts of fatty acids as the friction modifier. This is not deemed to be persuasive because such friction modifiers are well known in the art as additives to transmission fluids. Sato et al (6,593,281) ["Sato ('281)"] discloses automatic transmission fluids containing friction modifiers which may be selected from fatty acids, higher alcohols, fatty acid esters, oils and fats, imide compounds, boron-containing cyclic carboxylic acid imides and the like. See column 4, lines 41-63. Ward discloses continuously variable transmission fluids comprising friction modifiers. Ward teaches that suitable friction modifiers include metal salts of fatty acids, fatty phosphites, fatty acid amides, and other compounds. See column 13, line 61 to column 15. Thus it would have been obvious to the skilled artisan to have added a conventional friction modifier as disclosed in either Sato ('281) or Ward to the compositions set forth in Sato ('286) if its known imparted property was so desired.

Applicant also argues that claimed component (A) comprises specific amounts of base oils (A-1) and (A-2) having particular kinematic viscosities which provides the claimed composition with advantageous effects. This is not deemed to be persuasive because, as set forth above, Sato ('286) teaches that the base oil component has a kinematic viscosity ranging from 0.5 to 200 mm<sup>2</sup>/s at 100°C, preferably 2-25 mm<sup>2</sup>/s at 100°C, and that mixtures of mineral oils and synthetic oils may be used in combination. Thus the examiner is of the position that the claimed base oil component is clearly taught by the prior art to Sato ('286).

The Declaration under 37 CFR 1.132 submitted by inventor Eitaro Morita on 09 July 2008 has been fully considered; however, the results presented therein are insufficient to rebut

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the established *prima facie* case of obviousness. First, the results pertain to specific succinimide compounds represented by formula (4), a bis-succinimide, and the claims at issue are not so limited. Independent claim 1 is drawn to a lubricating oil composition which comprises component (D), “one or more compounds selected from the group consisting of succinimide compounds represented by formulas (3) and (4) below in an amount of 0.1 to 6 percent by mass”. Thus, the lubricating oil compositions of the claims may comprise succinimide of formula (3), and NOT the bis-succinimide of formula (4). Second, as set forth above, Watts discloses bis-succinimides wherein the R substituent contains C<sub>6</sub> to C<sub>30</sub> alkyl groups (Structure IV in column 10) which clearly encompasses the R substituent of the claimed bis-succinimide compounds of “a straight-chain or branched alkyl or alkenyl group having 12 to 25 carbon atoms”. Thus the examiner is of the position that the results presented in the Declaration are insufficient to rebut the rejection of record.

### ***Claim Rejections - 35 USC § 103***

Claims 1, 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogano et al in optionally in further view of Watts et al (6,613,722).

Ogano et al [“Ogano”] disclose a lubricating oil composition for internal combustion engines comprising a base oil composed of a mineral oil, synthetic oil, or mixtures thereof, incorporated with (A) an overbased calcium salicylate having a TBN in the range of 30-100 mgKOH/g in an amount of 0.05 to 0.90 weight % as calcium, and (B) a succinimide selected from the group consisting of (1) a boron-containing succinimide having a weight-average

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molecular weight of 3,000 or less at 0.04 weight % or less as boron, and (2) a non-borated succinimide having a weight average molecular weight of 3,000 or less at 0.01 to 0.25 weight % as nitrogen, and (3) mixtures thereof. See column 3, lines 7-53. Ogano teaches that the base oil may be used either individually or in combination and the oil(s) have a kinematic viscosity in the range of 2 to 20 mm<sup>2</sup>/s at 100°C. Ogano allows for the addition of other additives to the compositions that include phosphoric acid esters and phosphorous acid esters as antiwear agents which may be used in amounts of 0.1 to 5 % by weight. See column 7, lines 36-41. Ogano also teaches the addition of friction modifiers to the composition including fatty acids and fatty acid esters. See column 7, lines 21-27. Thus the examiner maintains the position that all of the components of applicant's claims are taught by Ogano.

Applicant argued that the presently claimed composition contains a non-borated succinimide having formula (3) or (4) which differs from Ogano which teaches that the Mw of the non-borated succinimide component is 3000 or less, preferably 2100 or less. Applicant argues that the non-borated succinimides disclosed in the Examples in Ogano contain molecular weights between 2335 and 2837 which are far greater than the molecular weights of the claimed compounds of 621 for the mono-imide and 1053 for the bis-imide. This is not deemed to be persuasive because the disclosure of Ogano is not limited to the Examples, but to what is fairly taught to one of ordinary skill in the art which is that the non-borated succinimide component may have a molecular weight of 3000 or less, preferably 2100 or less. The examiner maintains the position that the molecular weights of 621 for the mono-imide and 1053 for the bis-imide of the claims for succinimide component (D) is within the disclosure of suitable non-borated succinimide compounds taught in Ogano.

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Applicant argues that the succinimide of Ogano has a polyalkenyl or polyalkyl structure (i.e., an alpha-olefin oligomer structure) which is completely different than the claimed structure having an alkyl or alkenyl group with 12-25 carbon atoms. This is not deemed to be persuasive because there is no structural difference between an olefin oligomer which contains straight or branched chain alkyl and alkenyl (an alkyl group containing a double bond) groups and the claimed alkyl or alkenyl group with 12-25 carbon atoms. Applicant also argues that Ogano does not teach or suggest the claimed sulfur-phosphorus additives as set forth in amended claim 2. This is not deemed to be persuasive because Ogano teaches in column 7 that suitable extreme pressure agents include phosphoric acid amines.

The Declaration under 37 CFR 1.132 submitted by inventor Eitaro Morita on 09 July 2008 has been fully considered; however, the results presented therein are insufficient to rebut the established *prima facie* case of obviousness. First, the results pertain to specific succinimide compounds represented by formula (4), a bis-succinimide, and the claims at issue are not so limited. Independent claim 1 is drawn to a lubricating oil composition which comprises component (D), "one or more compounds selected from the group consisting of succinimide compounds represented by formulas (3) and (4) below in an amount of 0.1 to 6 percent by mass". Thus, the lubricating oil compositions of the claims may comprise succinimide of formula (3), and NOT the bis-succinimide of formula (4). Second, as set forth above, Ogano discloses bis-succinimides wherein the R substituent contains an oligomer residue of alpha-olefin having a carbon number around 2-8 (Structure II in column 5) which clearly encompasses the R substituent of the claimed bis-succinimide compounds of "a straight-chain or branched alkyl or



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alkenyl group having 12 to 25 carbon atoms”. Thus the examiner is of the position that the results presented in the Declaration are insufficient to rebut the rejection of record.

***Claim Rejections - 35 USC § 103***

Claims 1, 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bovington et al in combination with Watts et al (6,613,722) and either Sato et al (6,593,281) or Ward (6,451,745).

Bovington et al [“Bovington”] disclose a low viscosity lubricating oil composition having no more than 0.16 mass % of phosphorus, preferably less than 0.09 mass % phosphorus, which comprises a lubricating oil basestock and, as additives, (a) from 1-10 mass % of a dispersant including both borated and non-borated succinimides, (b) 0.05 to 0.6 mass % of elemental calcium derived from one or more detergents, and optional additives including zinc dihydrocarbyl dithiophosphate, an antioxidant, a pour point depressant, and a viscosity modifier. See column 1. Bovington teaches that usually the dispersants contain from about 0.01 to 0.1 mass % boron, as elemental boron. See column 5. Bovington teaches that the detergent component can have a TBN in the range of 15 to 600, and that suitable detergents include calcium salicylates. See column 6. The examiner maintains the position that the compositions of Bovington meet the limitations of the above rejected claims.

Applicant argues that the presently claimed composition contains a non-borated succinimide having formula (3) or (4) which differs from Bovington which teaches that the Mw of the polyisobutenyl group is from 950 to 3000 which is outside the molecular weight range of the claimed compounds of 439-1053. This is not deemed to be persuasive because Bovington

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discloses a broader molecular weight range of 300 to 20,000 for the oil-soluble polymeric hydrocarbon backbone of the dispersant component. See column 3, lines 13-55. The examiner is of the position that the molecular weights of 621 for the mono-imide and 1053 for the bis-imide of the claims for succinimide component (D) is within the disclosure of suitable non-borated succinimide compounds taught in Bovington.

Applicant also argues that Bovington does not teach or suggest the sulfur-phosphorus additive in dependent claim 2 which is an ammonium or amine salt. This is not deemed to be persuasive because Bovington discloses both metallic and ashless phosphorus and sulfur-containing compounds in the invention. See column 7, line 37 to column 8, line 40. Although ammonium and amine salts of the phosphorus-containing compounds are not specifically set forth, Watts discloses amine salts of organic phosphates as conventional additives in lubricating oil compositions. See column 5, line 62 to column 6. The examiner is of the position that it would have been obvious to the skilled artisan to have added a conventional phosphorus-containing additive such as an ammonium or amine salt of an organic phosphate to the composition of Bovington if its known imparted property was so desired.

In response, applicant amended independent claim 1 to include component (I) a friction modifier which is at least one compound selected from the group consisting of fatty acid esters and metal salts of fatty acids in the oil composition, and amended claim 1 to include that the lubricating the base oil component (A) comprises (A-1) a mineral and/or synthetic oil having a low viscosity, and (A-2) a heavy mineral oil having a higher viscosity than (A-1). Applicant argued that Bovington does not teach the use of fatty acid esters and metal salts of fatty acids as a friction modifier to the composition. This is not deemed to be persuasive because such friction

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modifiers are well known in the art as conventional lubricating oil additives. Sato et al (6,593,281) [“Sato (‘281)”] discloses automatic transmission fluids containing friction modifiers which may be selected from fatty acids, higher alcohols, fatty acid esters, oils and fats, imide compounds, boron-containing cyclic carboxylic acid imides and the like. See column 4, lines 41-63. Ward discloses continuously variable transmission fluids comprising friction modifiers. Ward teaches that suitable friction modifiers include metal salts of fatty acids, fatty phosphites, fatty acid amides, and other compounds. See column 13, line 61 to column 15. Thus it would have been obvious to the skilled artisan to have added a conventional friction modifier as disclosed in either Sato (‘281) or Ward to the compositions set forth in Bovington if its known imparted property was so desired.

Applicant also argues that claimed component (A) comprises specific amounts of base oils (A-1) and (A-2) having particular kinematic viscosities which provides the claimed composition with advantageous effects. This is not deemed to be persuasive because Bovington broadly teaches that the base oil component is selected from the group consisting of Group I, II, III, IV, V and mixtures thereof. Thus the examiner is of the position that the claimed base oil component is clearly taught by the prior art to Sato (‘286).

The Declaration under 37 CFR 1.132 submitted by inventor Eitaro Morita on 09 July 2008 has been fully considered; however, the results presented therein are insufficient to rebut the established *prima facie* case of obviousness. First, the results pertain to specific succinimide compounds represented by formula (4), a bis-succinimide, and the claims at issue are not so limited. Independent claim 1 is drawn to a lubricating oil composition which comprises component (D), “one or more compounds selected from the group consisting of succinimide

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compounds represented by formulas (3) and (4) below in an amount of 0.1 to 6 percent by mass”. Thus, the lubricating oil compositions of the claims may comprise succinimide of formula (3), and NOT the bis-succinimide of formula (4). Second, as set forth above, Bovington discloses as the dispersant component a bis-succinimide having a molecular weight range of 300 to 20,000 for the oil-soluble polymeric hydrocarbon backbone of the dispersant component which clearly encompasses the R substituent of the claimed bis-succinimide compounds of “a straight-chain or branched alkyl or alkenyl group having 12 to 25 carbon atoms”. Thus the examiner is of the position that the results presented in the Declaration are insufficient to rebut the rejection of record.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen M. McAvoy whose telephone number is (571) 272-1451. The examiner can normally be reached on M-F (7:30-5:00) with alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ellen M McAvoy/

Ellen M McAvoy  
Primary Examiner  
Art Unit 1797

EMcAvoy  
September 13, 2008